

Utah's Approach to New WQ Criteria for Ammonia

Utah Division of Water Quality
Water Quality Standards Workgroup
July 21, 2014

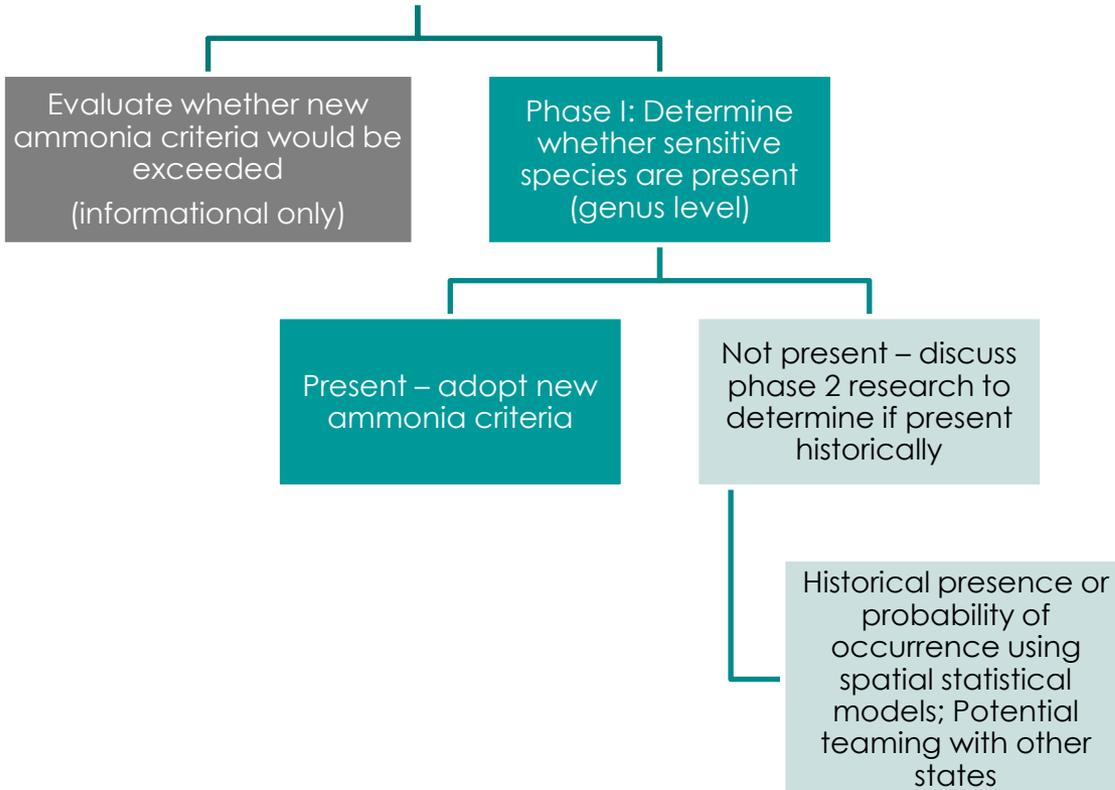


Utah's Approach

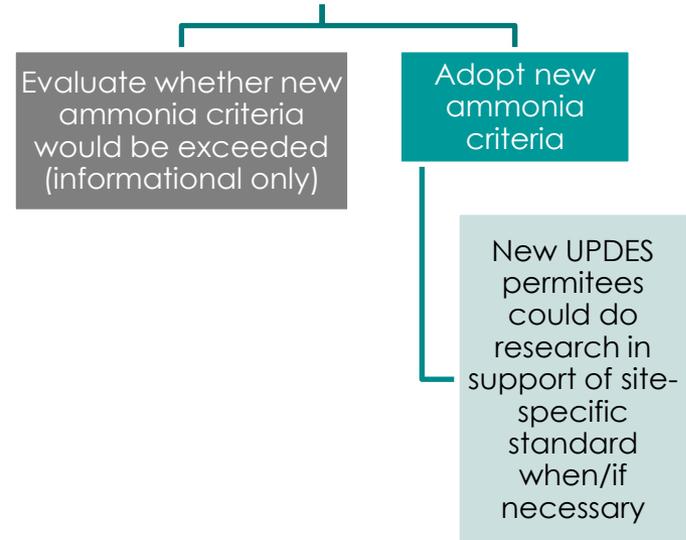
Scoping

- ✓ Recalculation scenarios for presence/absence of sensitive species
- ✓ Presence of families with sensitive species using existing data
- ✓ Potential impacts on POTWs

Receiving Waters with Current UPDES permits



Non-Receiving Waters



Recalculated Acute Ammonia Criteria Scenarios

Criteria ¹ (mg TAN/L)	Final Acute Value (mg TAN/L)	Scenario	Species Used for Final Acute Value
17	33.85	Sensitive mussels and snails present and salmonids absent per USEPA (2013)	
24	48	Salmonids and snails present and sensitive mussels absent per USEPA (2013)	
29	58.43	Salmonids and sensitive snails present but no sensitive mussels ²	Golden Shiner, Pebblesnail, Lost River sucker, Mountain whitefish
30	60.23	Salmonids present but no sensitive mussels or snails ²	Shortnose sucker, Golden Shiner, Lost River sucker, Mountain whitefish
38	74	Snails present but no sensitive mussels or salmonids per USEPA (2013)	

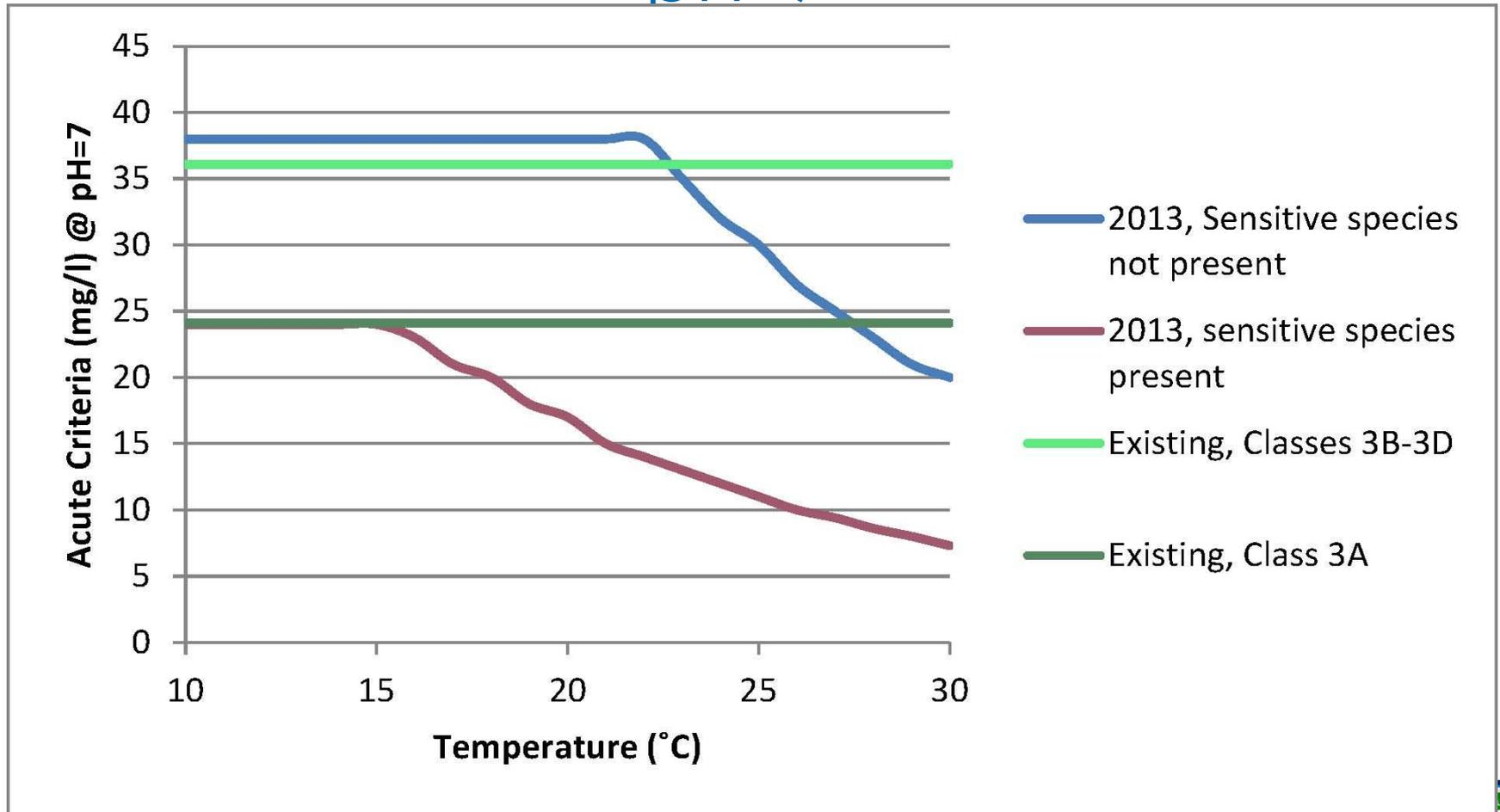
¹Current acute standard is 24 mg/L at 7 pH for Class 3A

²These were recalculated by DWQ by backing out the described species to show the potential impact of sensitive snails on the ammonia criterion. The difference observed between the values provided in the USEPA criteria document and these recalculated values requires further evaluation. The recalculations assume 7 pH and 20° C and that all genus mean acute values are above the 5th percentile

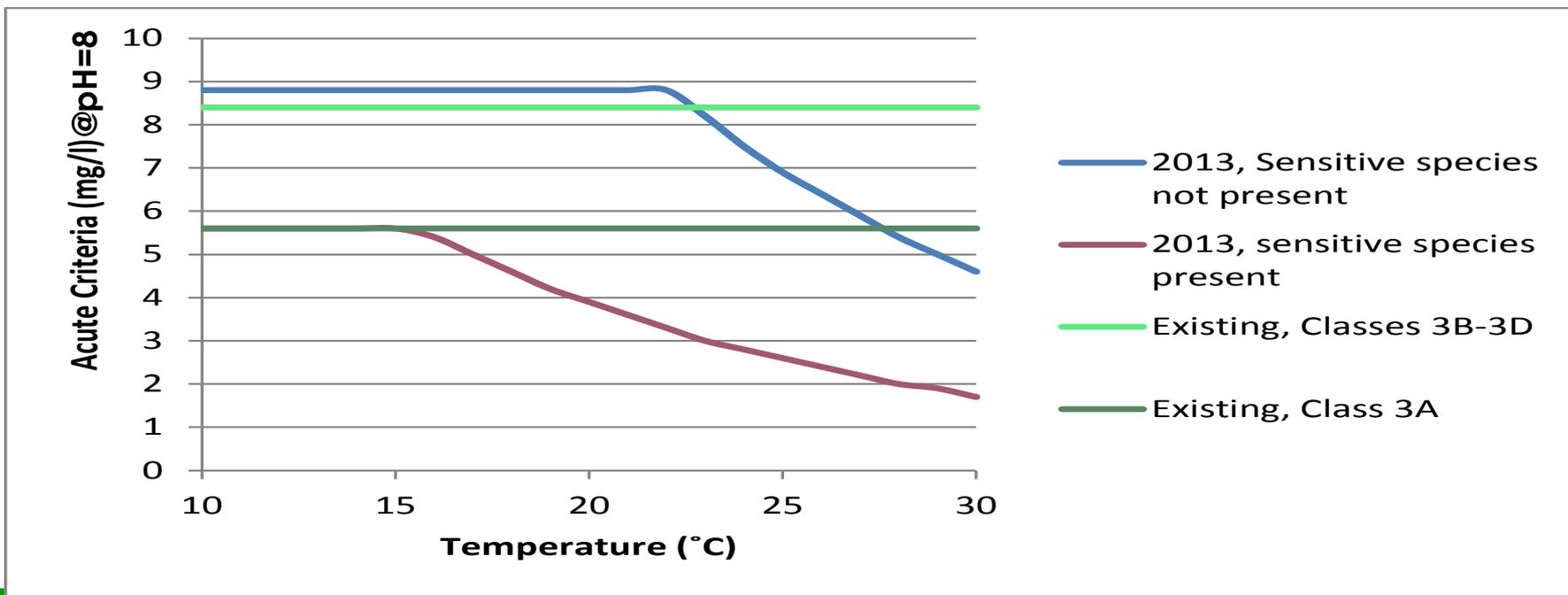
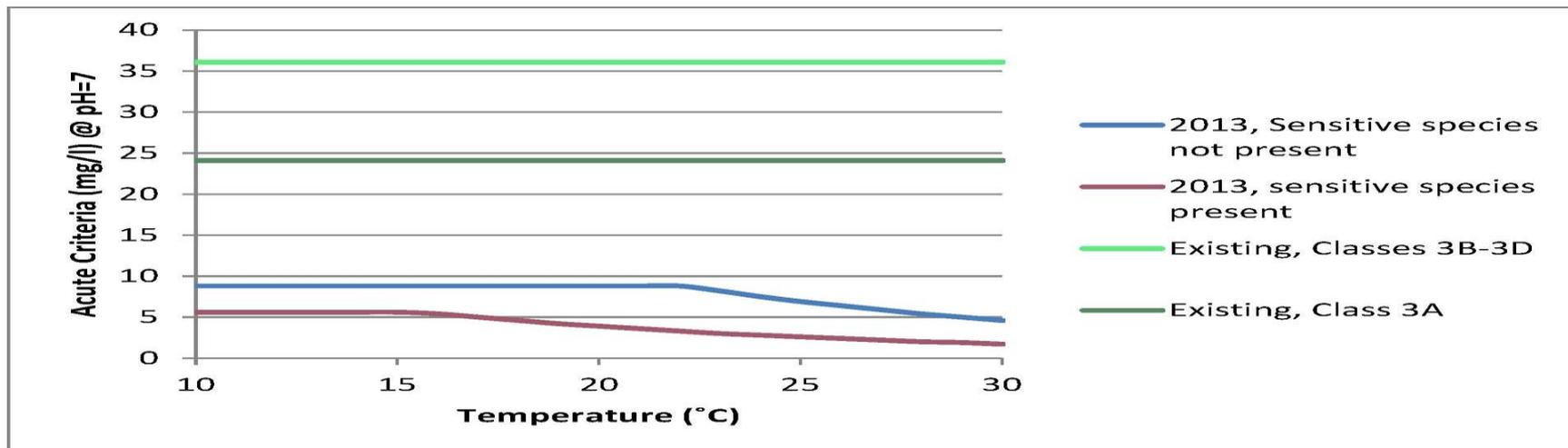


2013 (new) maximum (acute) ammonia criteria compared to existing criteria at pH=7

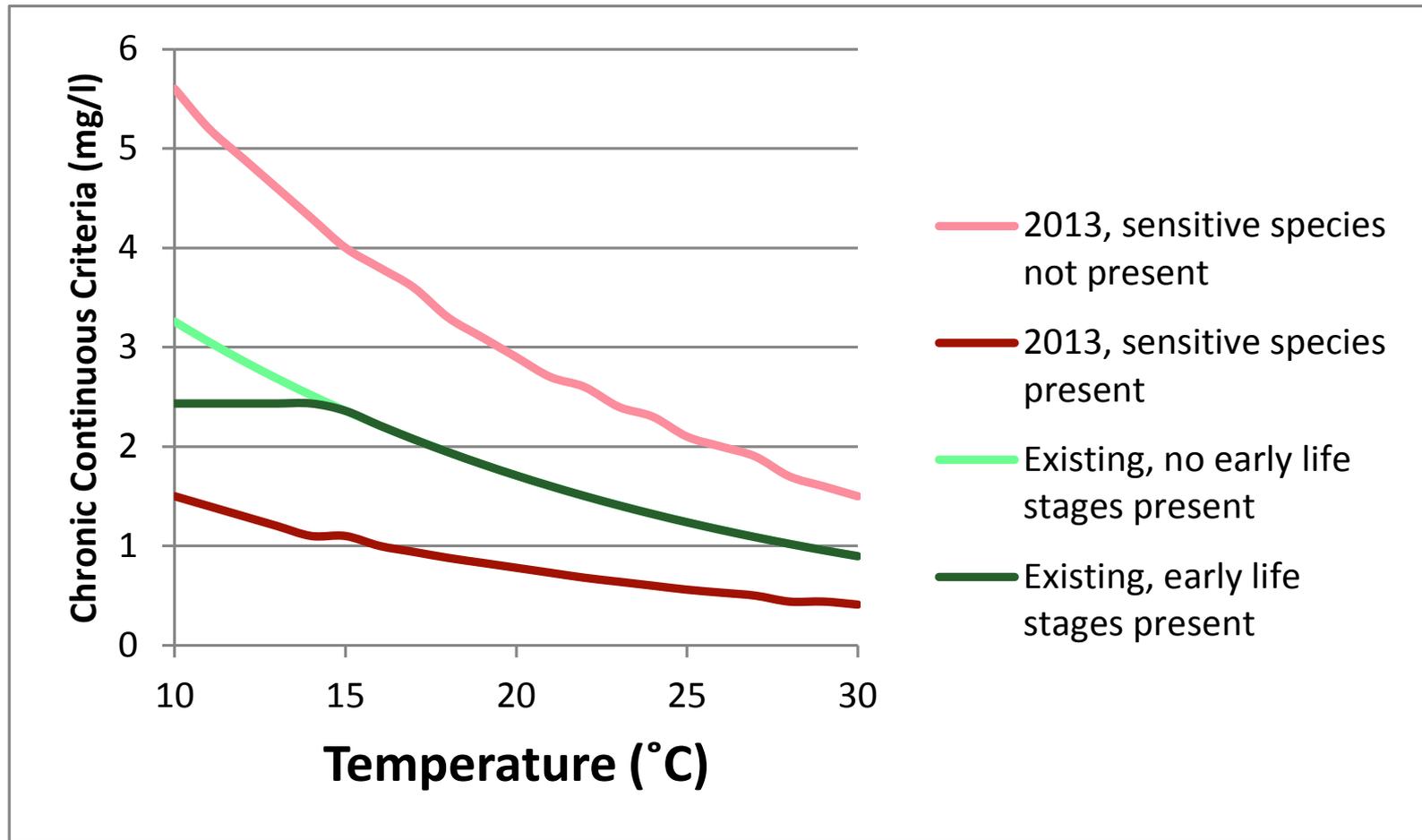
pH=7



2013 (new) maximum (acute) ammonia criteria compared to existing criteria at pH=7 and 8



2013 (new) chronic ammonia criteria compared to existing criteria at pH=8



Gastropod families in Utah that include sensitive species



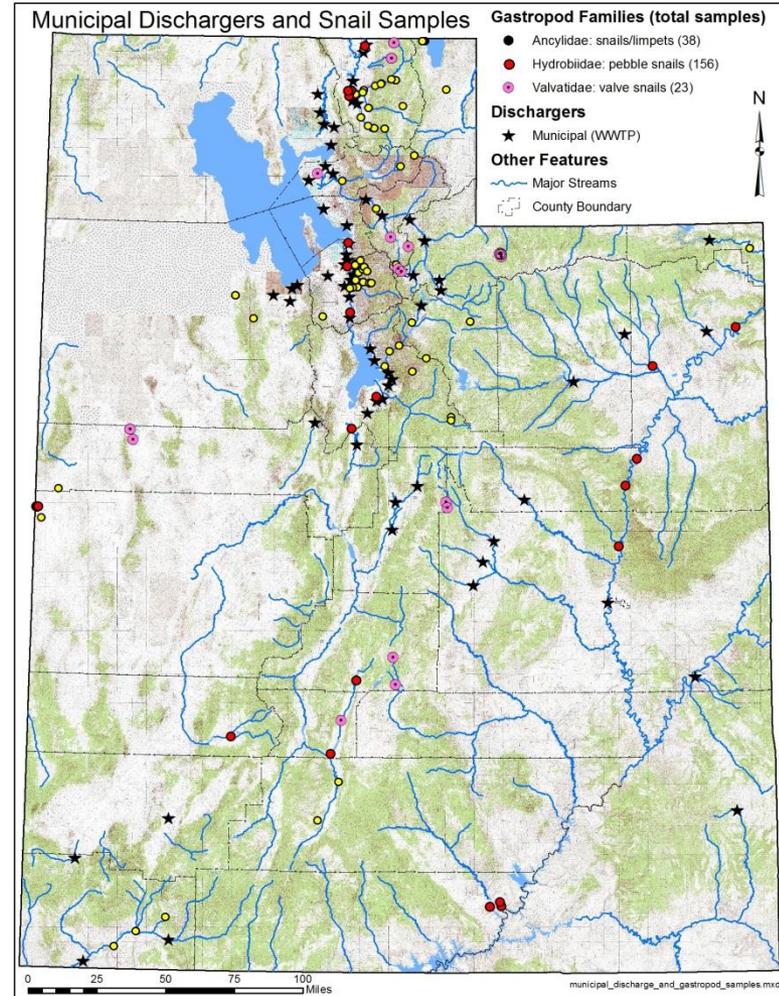
- Ancyliidae (tribe in family Planorbidae): snails/limpets



- Hydrobiidae: mud snails/spring snails



- Valvatidae: valve snails



Bivalve families in Utah that include sensitive species



Photo courtesy of CA Dept of Fish and Wildlife, Aquatic Bioassessment Laboratory

● Pisidiidae: pill clams



Photo courtesy of BLM/USU National Aquatic Monitoring Center

● Unionidae: mussels

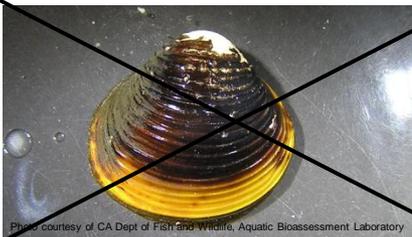
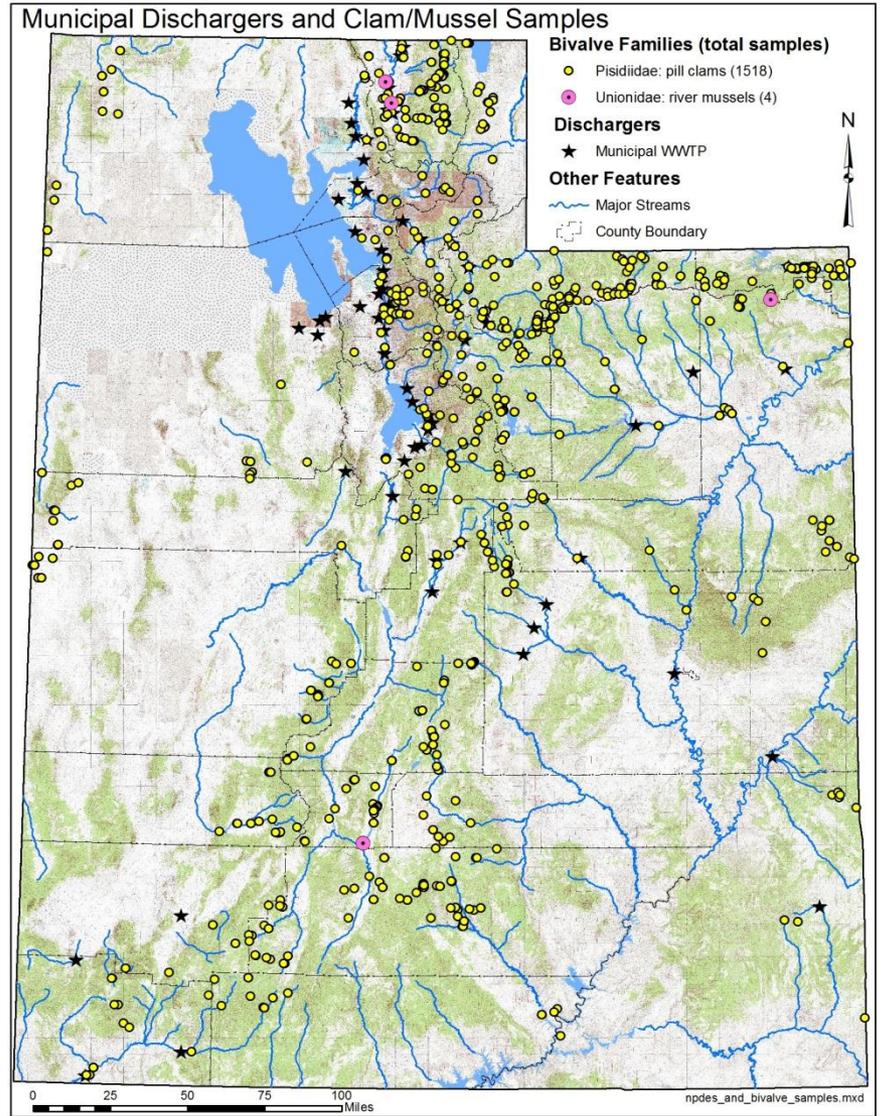


Photo courtesy of CA Dept of Fish and Wildlife, Aquatic Bioassessment Laboratory

● Corbiculidae: Asian clams

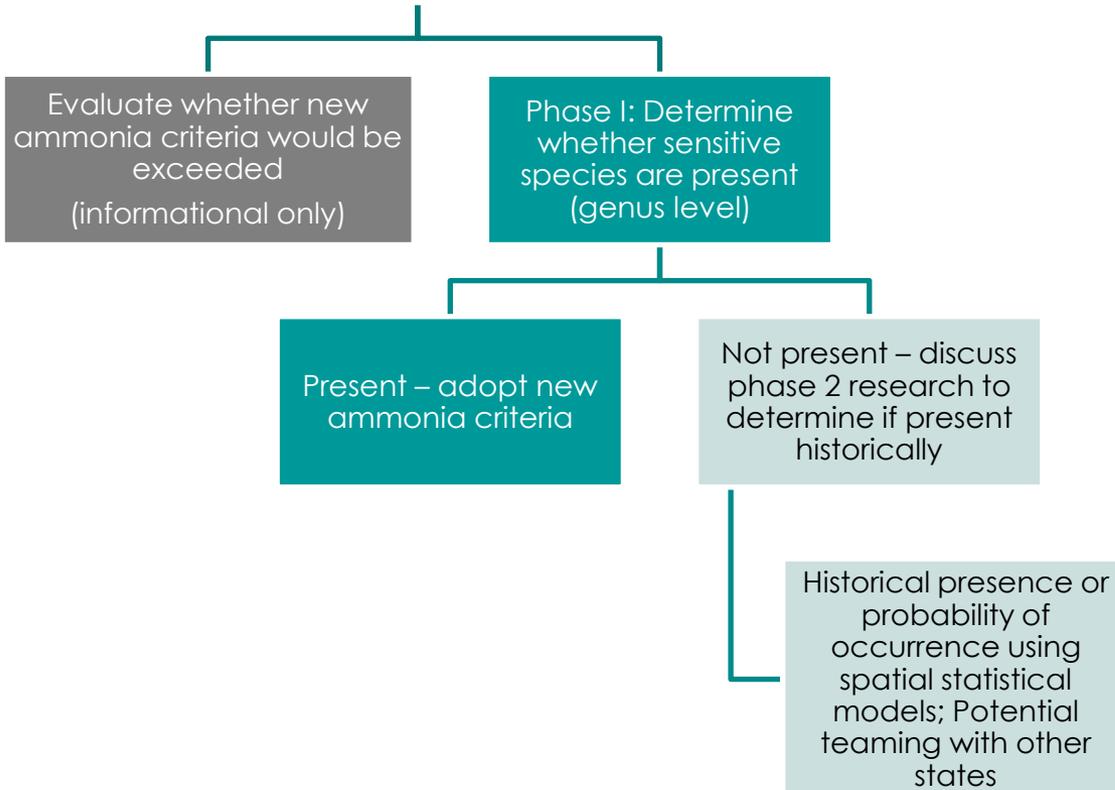


Utah's Approach

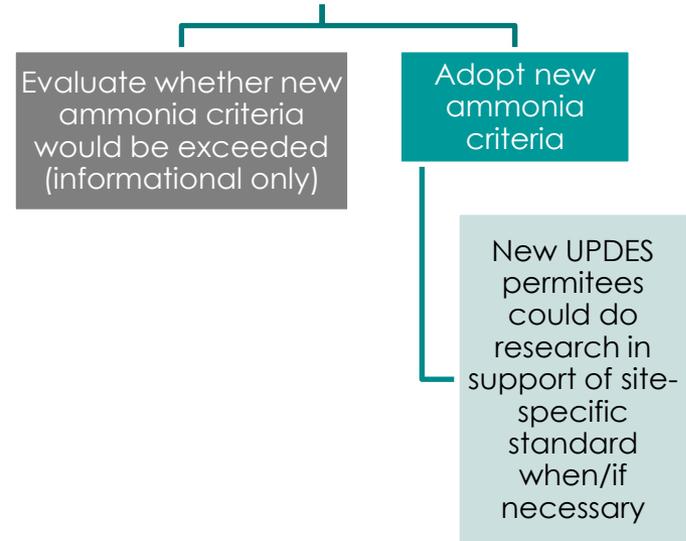
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Determining Presence of Sensitive Mollusks

- Species occur at site if...
 - Are usually present at the site.
 - Are present at the site only seasonally due to migration.
 - Are present at the site intermittently because they periodically return to or extend their ranges into the site
 - Were present at the site in the past, are not currently present at the site due to degraded conditions, but are expected to return to the site when conditions improve.
- Are these sensitive mollusks present today?
 - Historical records
 - Field surveys
 - eDNA



Discussion/Questions?

